

Nursing Workforce Supply Data Trends in Hawaii

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Abstract

Surveys of the nursing workforce in Hawaii over the last six years point to an increasing shortage of nurses. Data trends reveal a nursing workforce that is older than the rest of the U.S. with more ethnic and gender diversity. Strategies are needed to ensure adequate numbers and levels of nurses to meet the health care needs of the people of Hawaii.

Introduction

A recent report from the HRSA National Center for Health Workforce Analysis, "Projected Supply, Demand, and Shortages of Registered Nurses: 2000-2020", published in 2002 indicates that there is a nursing shortage in the nation of 6%, and by 2010, the shortage will be 12% across the country.¹ While that same report indicated there will not be a nursing shortage in Hawaii in the future, the April 2003 revision to the report corrects that projection. The data that have been collected in Hawaii are consistent with the revised 2003 HRSA projections.

Since 1996, the Community Initiative on Nursing of Hawaii (CINH) has been collecting and analyzing data related to the nursing workforce in Hawaii.² CINH was funded by the Robert Wood Johnson Foundation as part of Colleagues in Caring, Regional Collaboratives for Nursing Workforce Development. While funding for the project ended in 2002, the work of the initiative continues.³ The first study was done by CINH in 1997, the second in 1999, and the third in 2001. The survey for 2003 is in progress.

The data from the CINH studies indicate that the nursing shortage in Hawaii will intensify. The purpose of this article is to describe demographic and professional characteristics of the current nursing workforce in Hawaii and compare data trends in Hawaii's nursing workforce.

Methods

This survey utilized a stratified, random sample of registered nurses that would be representative of the current pool of licensed registered nurses living in the state of Hawaii. Power analysis indicated that 3,500 of the 10,290 registered nurses living in Hawaii would need to be surveyed. The survey instrument was refined from the 1997 and 1999 workforce studies⁴ incorporating items from the National Minimum Data Set for workforce supply and mailed to 3,500 RNs throughout the state.⁵ A response rate of 41% was obtained, with 1,435 completed surveys returned.

The supply of nurses in the workforce consists of current practicing nurses and those preparing to enter the workforce. Therefore, additional data were obtained from the public and private nursing education programs in the state to provide an estimate of the current nursing students enrolled in programs in the state and projections for future enrollments. In addition, data were collected on current and projected graduates of associate degree and generic baccalaureate degree nursing programs for the next 3 years.

Results

Demographic Characteristics

In 2001, the mean age of Hawaii's practicing nurses was 48.7 years, which has increased from 44.92 years in 1997. Currently, only 5.2% of the nursing workforce is under 30 years of age, which is a decrease in this youngest age group from 6.3% in 1999. In 1999, 39.9% of the licensed nurses in the state were 50 years of age or older, as compared to 46.5% in 2001. (See Table 1).

Table 1.— Age Range and Distribution of RNs in Hawaii

Age Range (Years)	Survey Year	
	2001	1999
	%	%
18-19	5.2	6.3
30-39	15.3	18.3
40-49	32.7	35.5
50-59	30.5	26.8
60+	16.0	13.1

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The ethnic distribution of the nursing workforce in Hawaii documents much more diversity than the nursing workforce across the rest of the United States. Caucasians comprise 48.3% of the workforce in Hawaii compared to 86.6% across the US.⁶ In Hawaii, 24.3% are Asian/Pacific Islanders, and 13.4% are Filipino. Only 5.1% of registered nurses are Hawaiian/Part Hawaiian. (See Table 2). Comparisons with national data in other categories of ethnicity is not possible since the categories are different. For example, in Hawaii, Asian and Pacific Islanders are combined into one category, while the National Sample Survey separates Asians, combines Native Hawaiian and Pacific Islanders, and does not report Filipinos separately.

diploma or associate degree preparation, which is higher than the national figure 56.6%.⁶ Only 6.6% indicate that they have master's preparation, which is slightly less than the national figure of 7.5%.⁶ While 24.9% are certified, only 7.4% indicate having APRN recognition in the state.

Employment Characteristics

The majority (65.8%) of the workforce indicate that their "primary job" involves direct patient care. The top two categories of "primary nursing job" were staff/general (38.7%), and team leader/charge/manager (12.5%). The hospital remains the top primary employment site for nurses (44.5%), followed by ambulatory care (7.5%) and public or community health (7.1%). This indicates a change from 1999 when 48.9% of nurses worked in acute care and 1997 when 49.6% worked in acute care.^{9,10}

The mean number of years that Hawaii's RNs plan to continue to practice nursing is 14.6 years. In addition, 43.2% indicate the intention to retire in 10 years, and 62.4% anticipate retiring in 15 years. (See Table 3).

Hawaii (CINH Survey, 2001)		U.S. (National Sample Survey, 2000)	
Ethnicity	%	Ethnicity	%
White, Not Hispanic	48.3	White, Not Hispanic	86.6
Black, Not Hispanic	0.6	Black, Not Hispanic	4.9
American Indian/ Alaskan Native	0.2	American Indian/ Alaskan Native	0.5
Hispanic	1.9	Hispanic/Latino (any race)	2.0
Multiple Responses	4.7	Two or more races (non Hispanic)	1.2
Blank	1.3	Not Known	1.1
Note: survey categories differ slightly for the following			
Asian/Pacific Islander	24.3	Asian	3.5
Hawaiian/Part Hawaiian	5.1	Native Hawaiian/Pacific Islander	0.2
Filipino	13.4		
Other (write in)	0.1		

Currently, females constitute 93.8% of the nursing workforce in Hawaii. That percentage has remained stable since 1997. This is slightly lower than national data which indicates that females comprise 96% of the workforce.⁷ For Fall 2002, the gender distribution among Hawaii's baccalaureate nursing students as reported by Hawaii Pacific University is 88% female and 12% male (P. Matson, oral communication, April 1, 2003), while the University of Hawaii at Manoa School of Nursing and Dental Hygiene reports a distribution of 80% female and 20% male (L. Magnussen, oral communication, April 17, 2003). National data from the American Association of Colleges of Nursing (AACN) indicate that the female/male distribution among generic nursing programs of AACN member schools is 91.6% female, and 8.4% male.⁸

Basic educational preparation of Hawaii's nursing workforce ranges from 25.0% diploma, 37.4% associate degree, and 32.7% baccalaureate degree. The majority, or 62.4% of nurses, have

# of Years	%	Cumulative	Mean
0-5	17.4	17.4	14.6 Years
6-10	25.8	43.2	
11-15	19.2	62.4	
16-20	19.2	81.6	
>20	18.4	100	

Another indicator of workforce participation for RNs is the percent of licensed RNs currently employed in Nursing. Table 4 also indicates that the range of RNs currently not employed in nursing rose from 14.6% in 1997 to 19.5% in 2001.

Employed in Nursing	Survey year		
	2001	1999	1997
	%	%	%
Yes	80.0	83.7	85.4
No	19.5	16.3	14.6

Future Supply

The pool of new graduates is the main source for increasing the Hawaii nursing workforce. Anticipated nursing graduates (new nurses only) in the annual surveys of the nursing educational programs in the state are displayed in Table 5. The percent increase

in the actual graduation of new nurses from 1996-1997 through 2000- 2001 is 17.5%. The projections from 2001 and beyond show steady increases in numbers of anticipated new nurses: 339 (2001-2002), 362 (2002-2003), and 367 (2003-2004). That steady increase of 8.3% is the result of many general and targeted recruitment initiatives to increase the numbers and diversity of new nurses in the state and to improve recruitment from under-represented minorities, especially Native Hawaiians, into the profession.

Table 5.— Anticipated New Nurse Graduates in Hawaii								
Academic year								
	Actual					Projected		
	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04
AD	115	128	151	160	100	121	144	149
BS	119	139	143	163	175	218	218	218
Total # of New RNs	234	267	294	323	275	339	362	367

Data Trends

The mean age of Hawaii's nurses is greater than that of nurses across the nation, and has increased since 1997. The proportion of nurses aged 50 years and older has increased while those under the age of 30 has decreased. This relates directly to the retirement intentions of the nursing workforce. Since the mean age is 48.7 years and the mean number of years that RNs intend to continue practicing is 14.6, the implication is that nurses will retire around age 63. The data from 2001 indicate that in 5 years (2006), 17.4% of the nurses will retire. In 10 years (2011), 43.2% plan to retire and by 2016, 62.4% will be retired.

The ethnicity of nurses in Hawaii is much more diverse than across the rest of the nation, 48.3% white in Hawaii, 86.6% white on the mainland. While Asian and Pacific Islanders are well represented in Hawaii's nurses, the Native Hawaiians are clearly under-represented. This has implications for recruitment efforts.

Another aspect of diversity is gender distribution. While the gender breakdown of practicing nurses in Hawaii has remained unchanged since 1997, the gender distribution among nursing students indicate that the percentage of male nurses will be increasing as the current students enter the workforce.

The primary employment setting for nurses in Hawaii continues to be the hospital. However, that figure has steadily decreased from 49.6% to 44.5% between 1997 and 2001. Home care and public/community care and ambulatory care continue to be the top 3 employment settings for nurses in Hawaii.

The trend over the three study periods in the percent of licensed RNs currently employed in nursing shows a decrease from a high of 85.4% in 1997 to a low of 80.0% in 2001. While these nurses are licensed and currently counted in the nursing workforce, they are not available for nursing positions.

Discussion

Specific steps are needed immediately to address the shortage of nurses in Hawaii to assure quality health care for the people of Hawaii. The most pressing concern is the preparation of adequate numbers and levels of nurses to replace the large proportion that will be retiring within the next 10 - 15 years. While the data provide an estimate for retiring nurses, there is no data addressing reduction in the workforce for other reasons, such as reassignments for military dependents, deployment for military reservists, family relocations, and those who choose to leave the profession. Measures to improve both recruitment of new nurses and retention of current nurses are essential.

The nursing profession goes through cycles of over supply and under supply. In the last period of under supply, the health care industry in Hawaii recruited nurses from the U.S. mainland and from various English- speaking countries throughout the world. The situation is different now, and is actually much worse for several reasons. First, there is growing evidence that the shortage is worldwide. Previously, in-migration of nurses from other countries was seen as an effective strategy to alleviate the nursing shortage in Hawaii and nationally. However, concerns related to language, cultural, and practice differences have emerged.¹¹ In addition, recent reports indicate that Great Britain is experiencing a serious shortage of nurses including both recruitment and retention, and Canada anticipates a shortage of up to 113,000 nurses by 2011.^{12,13}

Second, the proportion of elderly in the population of Hawaii and the country is increasing. The Centers for Disease Control (CDC) estimates that by 2030, the number of persons over the age of 65 will be over 70 million, double what it was in 2002.¹⁴ In 2000, the elderly comprised 12.4% of the population. By 2030, that percentage will increase to 20%. In Hawaii, those over 65 comprised 13.3% of the population in 2000. The percent increase from 1990 - 2000 was 28.5%. During that same time period, the rate of increase nationally was 12.0%.¹⁴ Unquestionably, the health care needs of an increasing elderly population will escalate. The impact of the nursing shortage on health care capacity for the state, nation, and the world is a grave concern and is intensified by the aging population.

Solutions to the nursing shortage in Hawaii are sorely needed. Obviously, an increase in the capacity to educate nurses across the state is essential. Under the new leadership at the University of Hawaii at Manoa (UHM), funding to allow the admission of additional students is one measure that is already in place. At Hawaii Pacific University (HPU), a new nursing skills laboratory was opened in Fall 2002 and construction of two new classrooms has been completed recently.

Designing new models for nurse preparation is another strategy that is operational at UHM. The first accelerated program to prepare new nurses over 17 months started in August 2002. Those students will graduate by December, 2004. At HPU, the LPN to BSN and the 23-month accelerated BSN pathways are being revitalized.

All nursing programs are trying to recruit younger and more diverse students. Marketing measures to improve the image of nursing as a career choice are also needed. Currently, young women and men have many career choices open to them. Better advertising to highlight the multiple advantages of a nursing career are needed if the profession is to remain competitive, especially among the younger generation. Nursing programs are also trying to recruit

faculty in greater numbers as well as faculty who are more diverse in age, ethnicity, and gender.

Retention strategies for keeping Hawaii's current nurses in the workforce are essential. Health care institutions need to implement strategies to retain their more experienced nurses. For example, the recent collective bargaining agreements at two major health care facilities in Hawaii have implemented retention salary increases to recognize and reward 5, 10, and 15 years of service with salary increases.¹⁵

An important area that needs to be addressed is workplace accommodations to keep aging nurses at work. Ergonomic redesign of units to adjust for musculo-skeletal changes and restructuring of scheduling patterns to allow for flexibility, shorter work shifts, and job sharing are measures that could keep nurses practicing longer. Currently, there are four generations of nurses in the workforce. Zemke et. al. describe them as veterans, boomers, xers, and nexters.¹⁶ Strategies need to be in place so the profession can benefit from contributions of each group and maximize the energy flowing from their different perspectives. New respect for the wisdom and expertise of nurses with years of experience would have a positive impact on retention. One strategy is to pair new nurses with soon-to-retire nurses to learn from the past and value wisdom while tempering the rough edges of new, untested ideas.

Since 19.5% of the licensed workforce are not currently employed in nursing, steps need to be taken to entice them back into active practice. Very little is known about this group of licensed registered nurses who cannot be overlooked as one means of increasing the

capacity of the nursing workforce. Approximately 7.1% of licensed nurses are retired.¹⁰ What incentives are needed to recruit them back into active practice? If some of them were interested, what level of retooling would be needed to prepare them for practice? What disincentives exist with current retirement policies that may prevent their return to practice? There is value in exploring these questions as another means of increasing workforce capacity.

Conclusion

In conclusion, nursing surveys over the last six years point to an increasing shortage of nurses for the state of Hawaii. Data trends reveal a nursing workforce that is older than that nationally with more males in practice, more ethnic diversity, and the intention to retire in less than 15 years. An organized approach to address this issue is needed right now.

The approach that has been used in many states across the U.S. is the establishment of a Center for Nursing to address nursing workforce issues, mainly supply and demand. The 2003 state legislature passed legislation to create a Center for Nursing in Hawaii funded by a special fee attached to new and renewed nursing licenses from July 1, 2003 to June 30, 2009. The expectation is that the Center for Nursing will provide the infrastructure to address Hawaii's nursing workforce shortage.

The purpose of the Center for Nursing is to address the primary nursing workforce issues of supply and demand for nursing services, recruitment and retention of nurses and other health care personnel, and the development of a strategic plan for the state. The functions

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of the Center are fourfold: (1) Collect and analyze data and prepare and disseminate written reports and recommendations regarding the current and future status and trends of the nursing workforce; (2) Conduct research on best practices and quality outcomes; (3) Develop a plan for implementing strategies to recruit and retain nurses; and (4) Research, analyze, and report data related to the retention of the nursing workforce. The legislation places the Center for Nursing at the University of Hawaii at Manoa School of Nursing and Dental Hygiene under the direction of the Dean. The legislation establishes a Board of Directors to oversee the activities of the Center.

The Center for Nursing will play a pivotal role in nursing workforce development in Hawaii. It will enable data driven decisions to establish a strategic plan to shape the future of the nursing workforce and ensure adequate numbers and levels of nurses to meet the health care needs of the people of Hawaii.

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